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NOTICE OF ALLOWANCE AND FEE(S) DUE

97698 7590 10/20/2010

Huawei Technologies Co., Ltd.
c/o Conley Rose, P.C.
5601 Granite Parkway
Plano, TX 75024

EXAMINER

ZAIDI, IQBAL

ART UNIT

PAPER NUMBER

2464

DATE MAILED: 10/20/2010

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
|-----------------|-------------|----------------------|---------------------|------------------|

10/591,218

11/21/2007

Weizhong Yan

4202-02800

6632

TITLE OF INVENTION: METHOD FOR SWITCHING ROUTE AND NETWORK DEVICE THEREOF

| APPLN. TYPE | SMALL ENTITY | ISSUE FEE DUE | PUBLICATION FEE DUE | PREV. PAID ISSUE FEE | TOTAL FEE(S) DUE | DATE DUE |
|----------------|--------------|---------------|---------------------|----------------------|------------------|------------|
| nonprovisional | NO | \$1510 | \$300 | \$0 | \$1810 | 01/20/2011 |

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

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**Complete and send this form, together with applicable fee(s), to: Mail Mail Stop ISSUE FEE
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INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

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97698 7590 10/20/2010

Huawei Technologies Co., Ltd.
c/o Conley Rose, P.C.
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Plano, TX 75024

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

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| (Depositor's name) |
| (Signature) |
| (Date) |

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/591,218 | 11/21/2007 | Weizhong Yan | 4202-02800 | 6632 |

TITLE OF INVENTION: METHOD FOR SWITCHING ROUTE AND NETWORK DEVICE THEREOF

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|----------------|--------------|---------------|---------------------|----------------------|------------------|------------|
| nonprovisional | NO | \$1510 | \$300 | \$0 | \$1810 | 01/20/2011 |

| EXAMINER | ART UNIT | CLASS-SUBCLASS |
|--------------|----------|----------------|
| ZAIDI, IQBAL | 2464 | 370-225000 |

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
- ☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

- (1) the names of up to 3 registered patent attorneys or agents OR, alternatively, 1 _____
- (2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed. 2 _____
- 3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

- ☐ Issue Fee
- ☐ Publication Fee (No small entity discount permitted)
- ☐ Advance Order - # of Copies _____

4b. Payment of Fee(s); (Please first reapply any previously paid issue fee shown above)

- ☐ A check is enclosed.
- ☐ Payment by credit card. Form PTO-2038 is attached.
- ☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. Change in Entity Status (from status indicated above)

- ☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27. ☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

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This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

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| 97698 | 7590 | 10/20/2010 | EXAMINER | |
| Huawei Technologies Co., Ltd. c/o Conley Rose, P.C. 5601 Granite Parkway Plano, TX 75024 | | | ZAIDI, IQBAL | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2464 | |
| DATE MAILED: 10/20/2010 | | | | |

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 153 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 153 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

| | | | |
|-------------------------------|------------------------|---------------------|--|
| Notice of Allowability | Application No. | Applicant(s) | |
| | 10/591,218 | YAN, WEIZHONG | |
| | Examiner | Art Unit | |
| | IQBAL ZAIDI | 2464 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 07/26/2010.
2. ☒ The allowed claim(s) is/are 1,2,7,9,19-21,23-27,29-31,33 and 34.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
 - * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|---|
| <ol style="list-style-type: none"> 1. <input type="checkbox"/> Notice of References Cited (PTO-892) 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) 3. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____ 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit of Biological Material | <ol style="list-style-type: none"> 5. <input type="checkbox"/> Notice of Informal Patent Application 6. <input type="checkbox"/> Interview Summary (PTO-413), Paper No./Mail Date _____. 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance 9. <input type="checkbox"/> Other _____. |
|---|---|

DETAILED ACTION

Examiner's amendment

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with **Grant Rodolph** on **10/3/2010**.

IN THE CLAIM

1. (Currently Amended) A method comprising:

receiving a data packet comprising a data packet identifier;

identifying a destination port corresponding to the data packet identifier

from a first routing table, wherein there is a first association between the data packet identifier and the destination port in the first routing table; and

transmitting the data packet via a transmitting port corresponding to the

destination port based on a second association between the destination port and the transmitting port in a second routing table, wherein the transmitting port is used to transmit other data packets regardless of whether a failure is associated with the destination port,

wherein each destination port appears only once in the second routing table, and

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wherein the order of the second association is set according to the sequence of the port numbers of the destination port, and wherein at least one of the transmitting ports in the second routing table is associated with a plurality of the destination ports when the failure is associated with one of the plurality of the destination ports.

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2. (Currently Amended) A method comprising:

receiving a data packet comprising a data packet identifier;

identifying a destination port corresponding to the data packet identifier

from a first routing table, wherein there is a first association between the data packet identifier and the destination port in the first routing table; and

transmitting the data packet via a transmitting port corresponding to the

destination port based on a second association between the destination port and the transmitting port in a second routing table, wherein the transmitting port is used to transmit other data packets regardless of whether a failure is associated with the destination port,

wherein transmitting the data packet via a transmitting port corresponding

to the destination port based on a second association between the destination port and the transmitting port in a second routing table comprises:

searching out the transmitting port corresponding to the destination port

according to the second association; and

transmitting the data packet via the transmitting port,

wherein each destination port appears only once in the second routing table.

3. - 6. (Canceled)

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7. (Currently Amended) A network device, comprising:

a processor;

a first routing unit; and

a second routing unit,

wherein the processor is configured to communicate with the first routing unit and the second routing unit,

wherein the first routing unit is configured to save a first association between a data packet identifier and a destination port in a first routing table, and identify the destination port corresponding to the data packet identifier from the first routing table after receiving a data packet,

wherein the second routing unit is configured to save a second association between the destination port and a transmitting port in a second routing table, and transmit the data packet via the transmitting port corresponding to the destination port based on the second association, and

wherein each destination port appears only once in the second routing table.

wherein the order of the second association is set according to the sequence of the port numbers of the destination port, and

wherein at least one of the transmitting ports in the second routing table is associated with a plurality of the destination ports when the failure is associated with one of the plurality of the destination ports.

8. (Canceled)

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9. (Currently Amended) The network device according to Claim 7, wherein the second routing unit is further configured to search out the transmitting port corresponding to the destination port according to the second association.

10. - 18. (Canceled)

19. (Previously Presented) The method according to Claim 1, wherein the port number of the transmitting port is set to a port number of the destination port in the second table when the transmitting port is operating normally.

20. (Previously Presented) The method according to Claim 19, wherein when there is a service failure in any destination port, the transmitting port corresponding to the fault destination port is modified into a backup port of the fault destination port.

21. (Previously Presented) The method according to Claim 20, wherein each destination port appears only once in the second routing table.

22. (Canceled)

23. (Previously Presented) The method according to Claim 1, wherein the first routing table is not modified when there is a service failure in any destination port.

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24. (Previously Presented) The method according to Claim 23, wherein the data packet is not transmitted on the first transmitting port when a failure occurs in the first transmitting port.

25. (Previously Presented) The network device according to Claim 7, wherein the port number of the transmitting port is set to a port number of the destination port in the second routing table when the transmitting port is operating normally.

26. (Previously Presented) The network device according to Claim 7, wherein when there is a service failure in any destination port, the transmitting port corresponding to the fault destination port is modified into a backup port of the fault destination port.

27. (Previously Presented) The method according to Claim 7, wherein each destination port appears only once in the second table.

28. (Canceled)

29. (Previously Presented) The network device according to Claim 7, wherein the processor is configured to monitor each destination port in real time and modify the transmitting port corresponding to the fault destination port into a backup port of the fault destination port when a service failure is found in the destination port.

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30. (Previously Presented) The network device according to Claim 7, wherein the transmitting port is used to transmit other data packets regardless of whether a failure is associated with the destination port.

31. (Previously Presented) The network device according to Claim 7, wherein the first routing table is not modified when there is a service failure in any destination port.

32. (Canceled)

33. (Previously Presented) The network device according to Claim 7, wherein the data packet is not transmitted on the first transmitting port when a failure occurs in the first transmitting port.

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34. (Currently Amended) A device comprising:

a first routing unit configured to save a first association between a data packet identifier and a destination port in a first routing table; and

a second routing unit configured to save a second association between the destination port and a transmitting port in a second routing table,

wherein the second routing unit is further configured to search out the transmitting port corresponding to the destination port according to the second association,

wherein the transmitting port is used to transmit other data packets regardless of whether a failure is associated with the destination port,

wherein each destination port appears only once in the second routing table, and

wherein at least one of the transmitting ports in the second routing table is associated with a plurality of the destination ports when the failure is associated with one of the plurality of the destination ports.

35. (Canceled)

Allowable Subject Matter

2. **Claims 1-2 and 7 and 9 and 19-21 and 23-27 and 29-31 and 33-34** are allowed.

The following is an examiner's statement of reasons for allowance:

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Claims 1-2 and 7 and 34 are allowed over the prior art of record because the Examiner found neither prior art cited in its entirety, nor based on the prior art found any motivation to combine any of the said prior art reference which teach the limitation **the transmitting port is used to transmit other data packets regardless of whether a failure is associated with the destination port, wherein each destination port appears only once in the second routing table.**

It is noted that the closest prior art, Sainomoto et al (US 20020150114, , Oct. 17, 2002) shows a second relay unit for receiving the packet from the transmission unit in accordance with the first route information contained in the identifier; and a second lookup unit.

It is noted that the other closest prior art, Cassidy et al (US 7042837, May. 9, 2006) shows a row in the routing table corresponds to a neighboring node and at least one interconnect link for transmitting data to that node. These components enable the node to continue with the flow of a data packet to a destination port without when an interconnect link along the path to that node fails.

However, both Sainomoto et al. and Cassidy et al. fails to disclose or render obvious the above underlined limitations as claimed.

Conclusion

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3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Iqbal zaidi whose telephone number is (571) 270-3943. The examiner can normally be reached on Monday to Friday 8:30 AM to 5:00 PM.

If attempts to reach the above noted Examiner by telephone are unsuccessful, the Examiner's supervisor, NGO RICKY can be reached on 571-272-3139.

The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Ricky Ngo/

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Supervisory Patent Examiner, Art Unit 2464

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